

# ABSTRACT OF THE DISCLOSURE

In a helical scan type magnetic recording/reproducing apparatus, input data is encoded into  $n$ -channel (e.g.,  $n = 4$ ) signals for recording by first to fourth recording heads, and the recorded signal is reproduced by  $2n$  reproducing heads, subjected to a non-tracking process and decoded. In the apparatus, the first to fourth recording heads are configured as a single multi-gap head having four gaps. Each of the heads is made of a lower magnetic pole and an upper magnetic pole through a gap. The core width of the second to fourth heads is formed as a track pitch  $TP + \alpha_1$  so as to overlap by  $\alpha_1$  with a track pitch  $TP$  of the first to third heads to attain a predetermined recording width. The core width of the first head is formed as a track pitch  $TP + \alpha_2$  ( $\alpha_2 > \alpha_1$ ). As a result, high-density recording can be implemented.